



ADDO



This is the Addo system of data recording



Philosophy

As much work as possible is to be performed by the computer, as little as possible by the punch operator.

Equipment and mode of operation

Data for processing is entered on a base machine equipped with the same keyboard as an ordinary Addo-X adding machine. Connected to the Addo-X machine is a tape punch which produces punched tape that can be read straight into the computer. Punching is controlled by an easily-exchangeable program card. The punched tape may then be dispatched to a data processing center or read into your own computer. Multiple code combinations can be adapted to suit all types of computers. Results are obtained in the form of general ledger, payroll, invoice, and conventional accounting reports.

Addo punch cuts punching time

Thanks to the market's most advanced tape punch and the exclusive Addo program card, no data need ever be punched more than once. All permanent or intermediate data are stored in the computer which is controlled by the duplicating codes automatically punched in the tape by the program card. This saves the punch operator a great deal of work. Several companies have been able to effect savings

in punching costs of up to 70 % in comparison with earlier systems.

Profitable investment even for a single routine

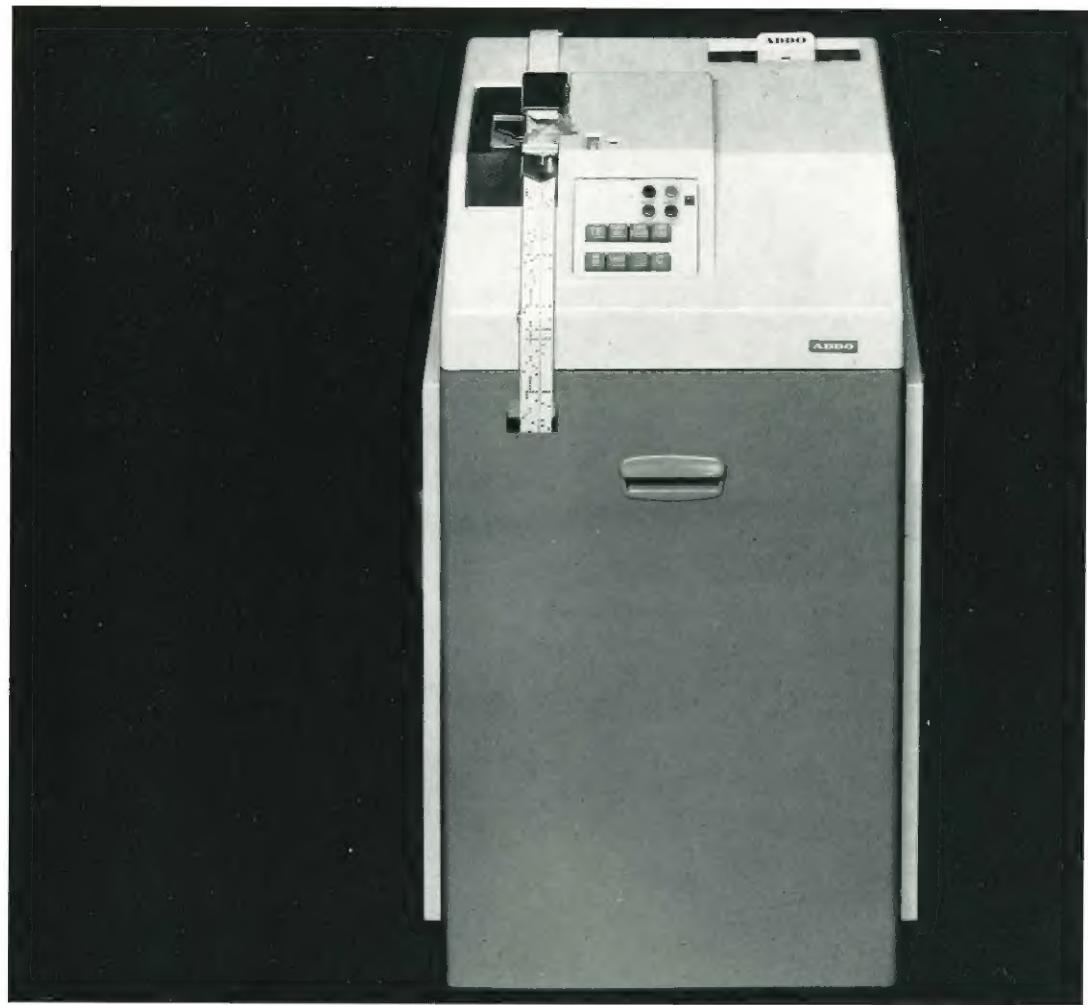
If payroll accounting is a bottleneck in your company, it would certainly pay you to evaluate the Addo system. Costs usually do not exceed the annual salary of an additional office employee. In many companies tape punching is a part-time job or is done at odd moments in addition to regular office work.

No specially-trained personnel required

Since the base machine has the same keyboard as an ordinary Addo-X 10-key adding machine most operators start with a high degree of speed and accuracy and must learn only the operation of the tape punch.

Any number of routines can be handled by the tape punch

The punch can be programmed for a new routine simply by exchanging the program card. Program cards are inexpensive and easy to program, enabling new routines to be added to the system as required. With the flexible Addo data recording system you have a system that can grow at the same rate as your company expands.



You can choose between these main types of basic units

The following advantages are common to all Addo-X machines:

Symmetrical keyboard

This makes operation with the left hand just as easy as with the right. Because all Addo-X models have identical keyboards an operator can transfer from a simple Addo-X to a more complex model without her speed being diminished.

Key interlock

Usually when calculating quickly, there is a risk that two keys can be depressed simultaneously. In this case the operator would not know whether both digits had been set in the register. This factor of uncertainty is eliminated on Addo-X machines by the presence of the key interlock, making it impossible to depress two keys at the same time.

One-function principle

This allows simpler and quicker calculating as no operation requires two keys to be depressed either simultaneously or consecutively: each operation has its own key and each key its own operation.

The Addo-X basic unit to be selected is determined by submitting your routines to a systems analysis. Addo has specially trained personnel for this purpose who are available to advise you.



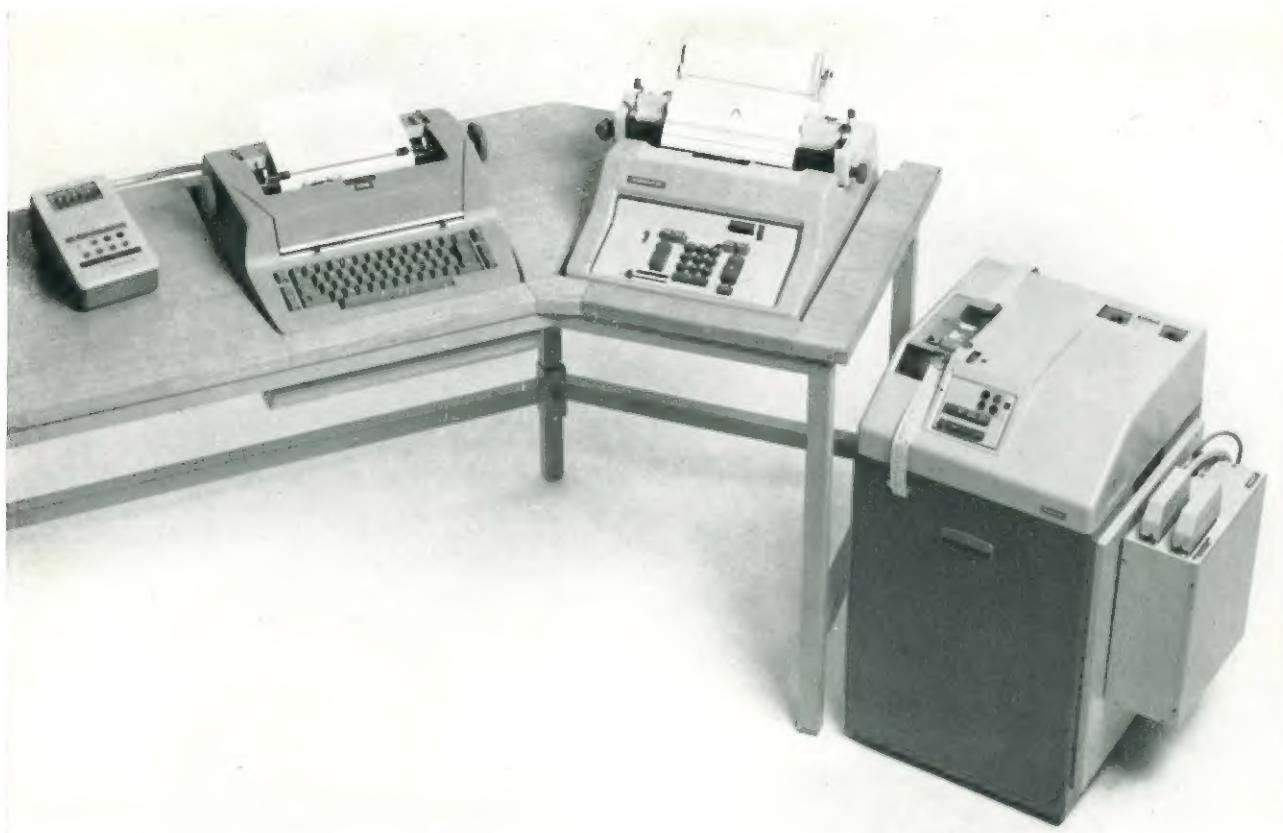
Addo-X adding machine

With one or two registers. All data are printed in a single column.



Addo-X shuttle carriage machine

An adding machine with moving carriage and one or two registers. Data are printed in two or three columns, in one or two of which the data may consist of code numbers which consequently are not transferred to the registers.



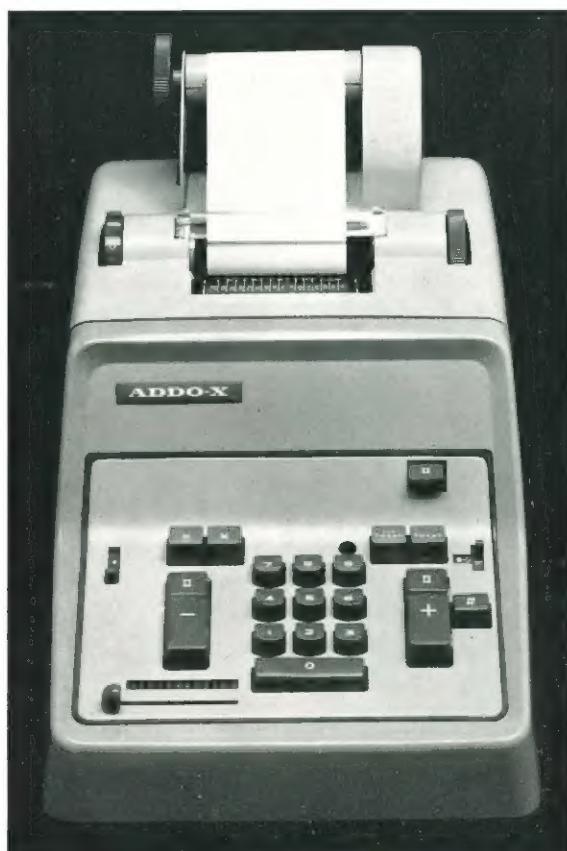
Alpha-numeric recording

An IBM typewriter with alpha-numeric output to punched tape may also be used as a basic unit. Combining an electric typewriter with any Addo-X machine provides a versatile configuration which

can be used for advanced alpha-numeric recording. At the same time it embodies the advantages conferred in recording numeric sections on a base machine with a keyboard of adding machine type and registers for checking purposes.

Addo-X OCR printer

The Addo-X OCR printer is an alternative to standard Addo tape punches, providing an inexpensive means of collecting data. Available with one register (model 353) or two (model 653), the Addo-X OCR printer is a conventional Addo-X adding machine with a printing mechanism designed to produce extremely sharp and accurate characters on the paper tape. As standard, it is obtainable with either of four type fonts: IBM 1428, ISO A, ISO B and Farrington 12F.



Connect the Addo Card-programmed Tape Punch

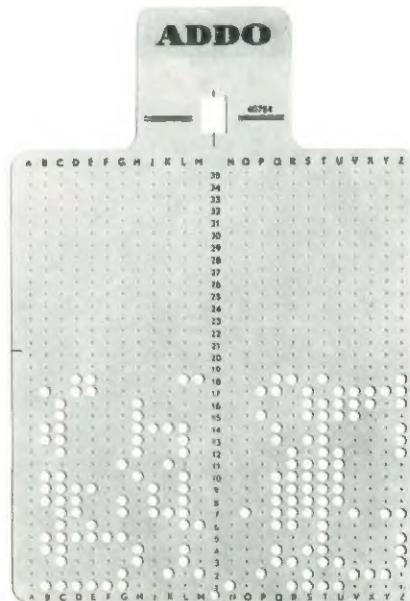


A change of program card = a change of routine

It only takes a moment to change from one work routine to another. It merely requires changing the program card.

The program card automatically controls the work on the basic unit. It checks that the operator follows the correct routine. If she makes a mistake the keyboard on the basic unit will lock and the punch will stop.

The card has additional functions. It automatically introduces special codes as required. It also carries out a zero check, i.e. a check that the total amount is zero in routines with pre-added check totals. If there is disagreement, the machine automatically locks.



The punch can easily be adapted for different tape widths and code systems so that you are free to use any type of data processing machine. This is a major advantage whether your own computer is to be used or a data service center.

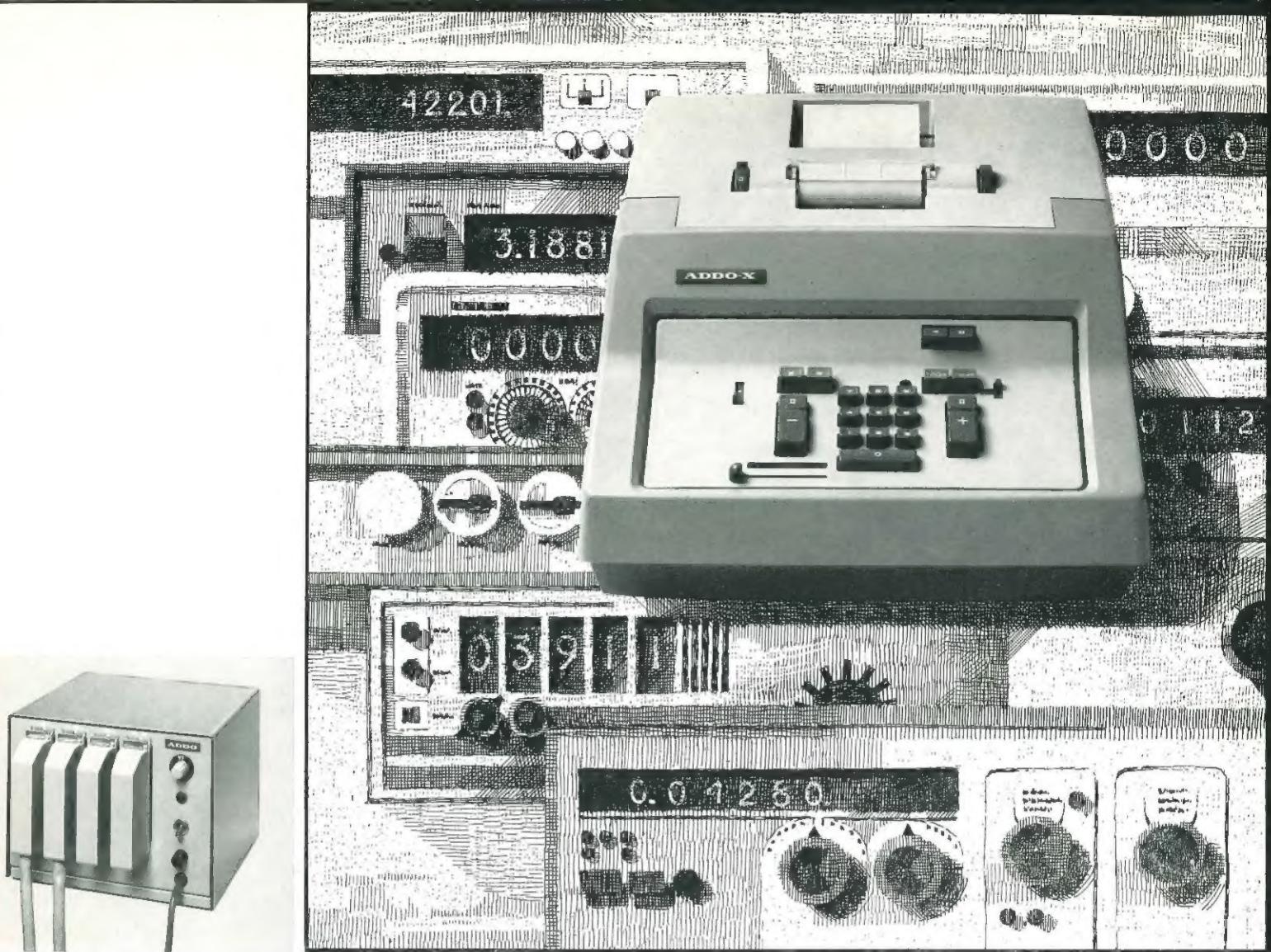
Computers can work with different tape widths having 5, 6, 7 or 8 tracks. The punch can be adapted to any new system of tracks as required without complicated modification.

The capacity of the punch can also be modified. If your system works with fixed word length (so that a number when set always contains a previously

determined number of digits) the punch automatically fills out the number with zeros as required.

Parity Check

Parity check. This is a check to make sure that every row punched in the tape contains either an odd or even number of holes as required by the code in use. In the event of an error the machine locks itself automatically and an alarm sounds until the operator has run through a correction routine that produces a correctly "edited" punched tape.



Automatic Measurement Recording

Addo-X machines with electric input (printers)

Among the Addo-X range of data recording equipment, machines with electromagnetic control comprise a group that is used for obtaining a print-out of results from various measuring instruments such as digital voltmeters, weighing machines, card readers, tape readers, memory keyboard, etc.

Input machines record on paper rolls of different widths and/or separate forms. In addition to information received via electrical inputs, manual entries can be made on the keyboard.

Machines are also obtainable with electric output to which auxiliary equipment can be connected for simultaneous recording on tape or other data medium, for checking data by check digit verifier, for telecommunications, etc. All input machines except the simplest model are equipped with a self-scanner — a device with which it is possible to scan a parallel static contact register decade by decade.

A special item of auxiliary equipment, the Addo BCD decoder, permits the use of equipment with a BCD output.

Addo input tape punch

The new Addo-X input tape punch is a useful alternative to the electromagnetic input used with an Addo-X machine. The input tape punch also provides the simplest and most effective method of obtaining continuous recording of readings and facts on punched tape without simultaneous legible print-out on the adding machine tally roll.

Data to be recorded is fed directly to the tape punch in the form of electric pulses which may be either coded or uncoded. If necessary, these pulses can be converted to the tape code for punching in 5—8 track tape.

Programming is by means of an interchangeable program plug. A replaceable diode matrix provides the requisite tape codes for corrections, tape feed, etc., in conjunction with automatic input.



The Addo Electronic Check Digit Verifier — 12 digits checked in 40 milliseconds

Assume that the operator has to enter account number 1324567899 and that she makes an error, setting up 1234567899 instead.

What will happen?

If equipped with an Addo Check Digit Verifier, the machine will refuse to punch the incorrect number. It takes merely 40 milliseconds for the verifier to check electronically a number containing 12 digits. At this high speed, no delays can possibly occur to affect the speed of the operator.

By using a constant digit emitter, the Check Digit Verifier can by itself pick up digits common to a large number of reports or vouchers, for example the clearing number for checks. This means that the operator is relieved of setting up to 6 digits for each entry where such repeated data are involved. It is easy to set these data on the constant digit emitter, and they can also be read directly from the digit indicator.

The Check Digit Verifier works with a check digit, i.e. a digit which is added to the original account number. The check digit can be determined by weighting the account number in accordance with the following:

Account number:

1 3 2 4 5 6 7 8 9 ? (check digit)

Weightings:

10 9 8 7 6 5 4 3 2 1

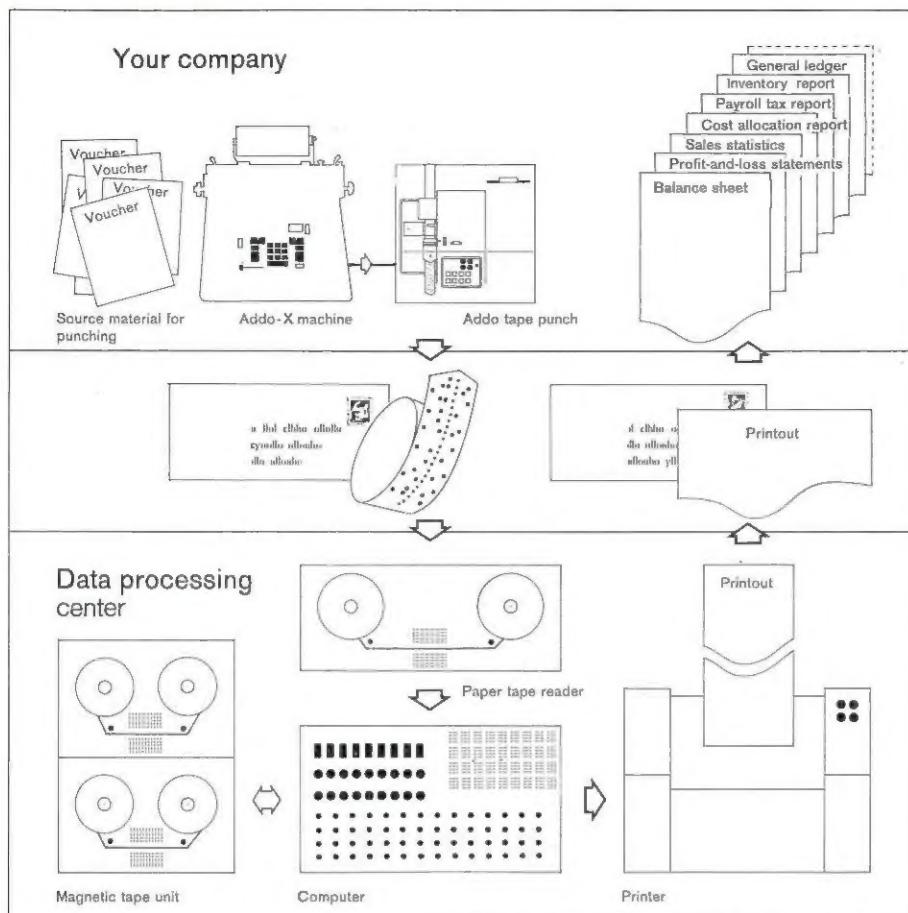
Multiplying each digit by its respective weighting and adding the results gives:

$$10 + 27 + 16 + 28 + 30 + 30 + 28 + 24 + 18 = 211.$$

A digit must be added to this number so that the total obtained can be divided by a modulus (in this case 11) without leaving a remainder. Thus $211 + 9 = 220$ and $220 : 11 = 20$, remainder 0. The digit required is thus 9 and the complete account number becomes 1324567899.

This is an example of how the Addo Check Digit Verifier works. The verifier can be programmed to use different moduli and weighting series.





Addo data processing, schematic layout

Simple arithmetic

On page 2, we explained how you can expand with Addo's data recording equipment and obtain a system tailored to your exact requirements. The general ledger, accounts receivable and accounts payable ledgers, cost analysis reports, profit-and-loss statements, invoicing, sales statistics, payroll tax reports, cost accounting procedures, material control reports, etc. are areas in which Addo data processing provides up-to-date and accurate information at sharply reduced costs.

The most inexperienced office employee can handle any of the above duties without special training when put to work on easy-to-operate Addo ADP equipment. This employee and an ADP machine can do as much work as 5 or more people. A data processing center constitutes the final link in the chain of office automation. The whole process soon pays for itself.

Thus far we have only touched upon the exceptional features of the Addo system. For your information, here are a few case histories to illustrate the benefits of ADP when used to full advantage:

One company increased its sales from 8 to 25 million without a corresponding increase in its office staff. One of Sweden's biggest bakeries now produces, delivers and invoices 100,000 units to 150 customers within a time of 12 hours.

One person working for a trucking firm spends only seven hours a day invoicing, checking, posting and preparing production reports for 3,000 freight shipments to 1,300 clients.

A department store completes orders and inventory controls for more than 90 different departments stocking 12,000 items, using part-time personnel.

A small firm which faced constantly recurring problems involving routine office chores came to the end of its tether when one of its two office workers requested an extended leave of absence. Addo solved the problem — at about half the cost of hiring a third office employee.

For further information ask for one of our leaflets listing and describing other case histories illustrating the versatility of Addo automation.

Extensive Programming Facilities

Due to the highly extensive programming facilities built into the tape punch, paper tape can be used to optimum advantage (once recorded, data need never be repeated or padded with zeros).

Maximum flexibility. By replacing the program card — which takes only a split second — the punch is completely converted for the next assignment. The number of programs is unlimited.

No special training needed. All Addo-X models have identical 10-key keyboards which enable an operator to transfer from a simple Addo-X to a more complex machine without any lag in speed. The symmetrical keyboard makes operation with the left hand just as easy as with the right.

Absolute control. The program card checks that the operator follows the set routine. In the event of an error, the Addo machine's key interlock acts automatically.

Simplified verification. Accuracy of punching is checked electronically in 40 milliseconds if the machine is equipped with an Addo Check Digit Verifier.

Safety features

Zero check: may embrace all or only certain selected terms.

Format control: a check that terms are not larger or smaller than a pre-determined format.

Carriage position check: a check that the carriage of the base machine is in the correct position.

Check digit verifier: may be used to check account numbers, employee numbers, etc. Optional weighting and modular systems may be employed.

Combinations of the above checks in conjunction with **character control** constitute a particularly reliable **sequence check**.

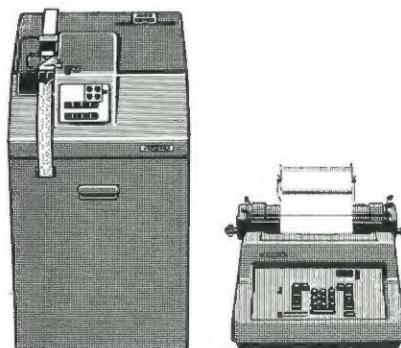
Fixed or variable word length. Take your pick among all commonly used code systems. Machines already in use can quickly and easily be adapted on-site for changeover from one system to another.

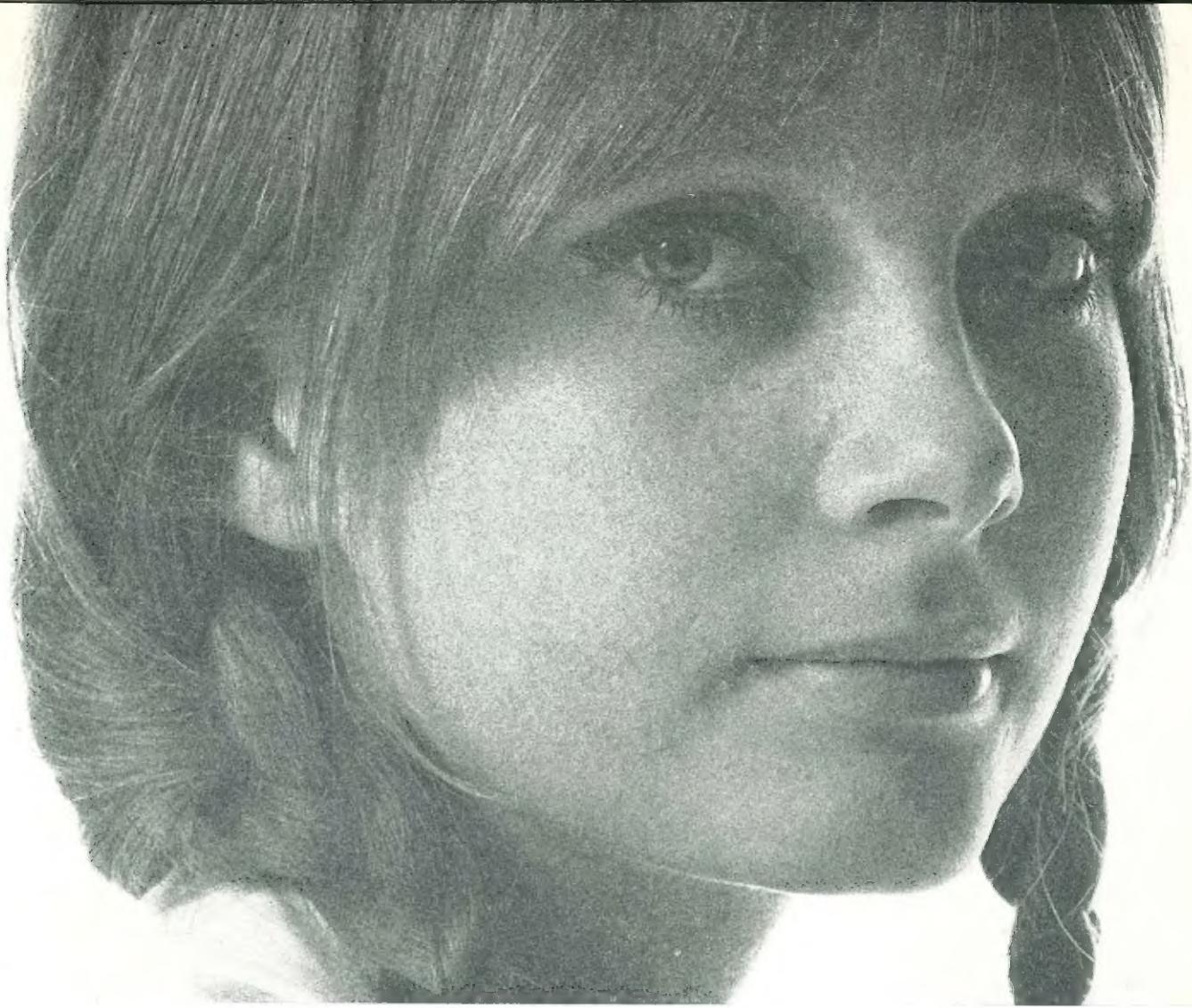
Maximum adaptability. The exclusive Addo-X Program Card represents the highest degree of versatility. The punch can easily be adapted to different tape widths and code systems.

In cases of job-switching between departments or machine down-time, Addo-X machines can be linked rapidly to a variety of other equipment, thus offering a maximum of operating flexibility.

The Addo-X Tape Punch conserves space. Compact and cleanly styled, machine and punch are separate units to permit the utmost use of available space.

Automatic recording. Addo-X machines can be obtained with electromagnetic input for the direct recording of readings from scales, flow gauges, etc. Readings are automatically transferred to the Addo-X machine which prints them on the documents required.





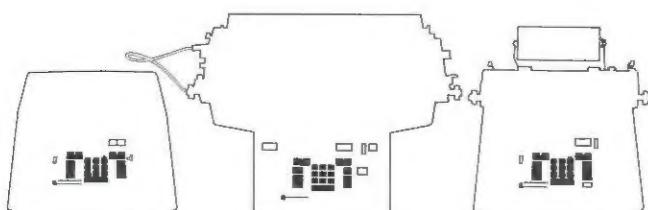
Mary, 18

Quickly and without retraining she graduated from an ordinary Addo-X to an advanced Addo for Automatic Data Processing.

How come?

Simple. Same symmetric keyboard on all Addo machines. Fingertips at home on one are at home on all.

1. The Addo-X keyboard can be operated with one hand (either right or left).
2. Because of 1, the operator has her other hand free for turning documents.
3. Because the Addo-X keyboard is symmetrical it can be used without the operator taking her eyes off the documents (touch operation).
4. Because of 1, 2 and 3 the operator can attain higher speeds, greater accuracy and greater efficiency with less fatigue than she can on any other type of machine.



Addo-X Class 300
add/listing machine

Addo-X Class 7000
accounting machine

Addo-X for ADP



Office automation is no longer the province of the large company only. Addo ADP equipment offers every company an opportunity to apply long-awaited automation to tedious and time-consuming office procedures. Cost should present no obstacle; it is reasonable and will quickly be repaid.

ADDO
Malmö — Sweden

